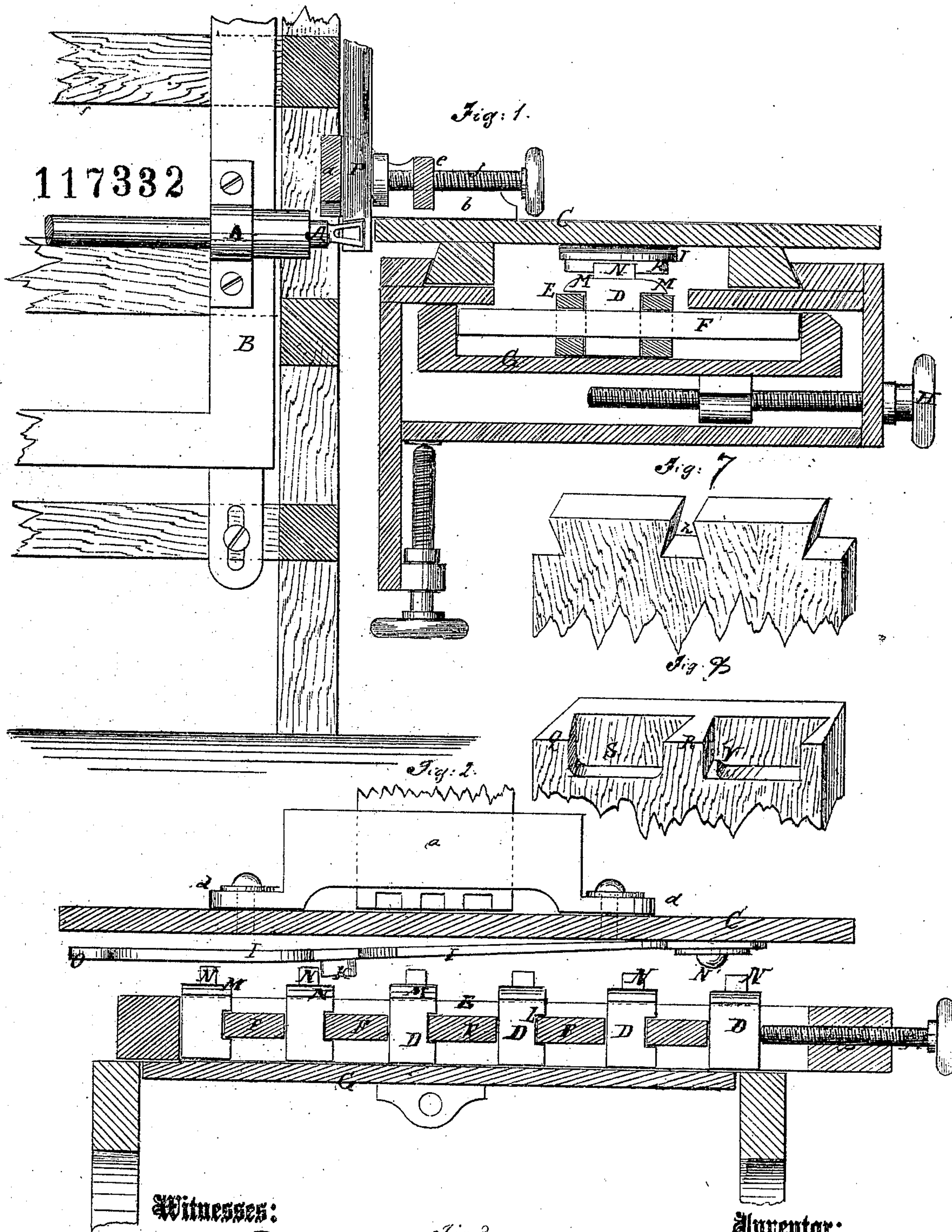


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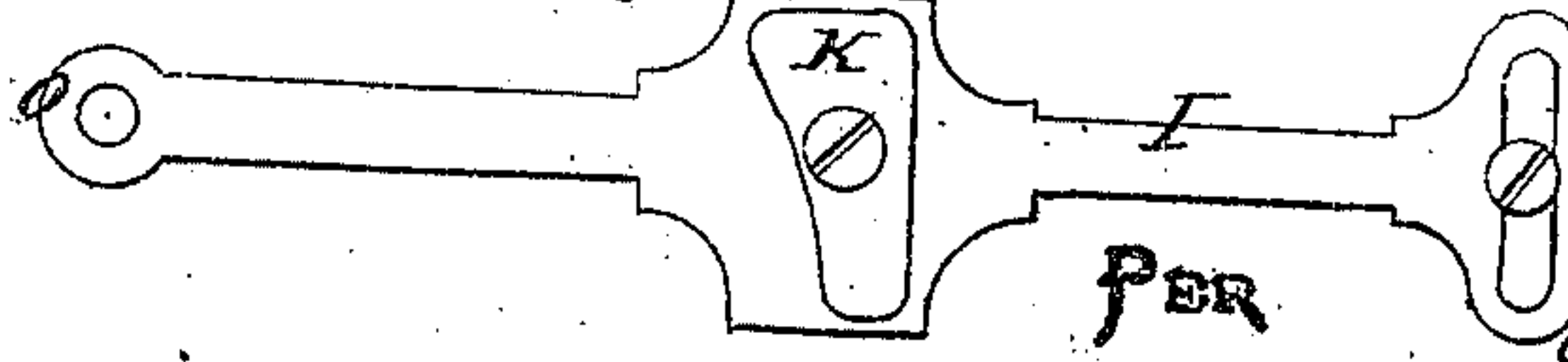
J. B. Ritchey's Dovetailing Machine.



Witnesses:

Chas. Nida.
Wm. H. C. Smith

Fig. 3



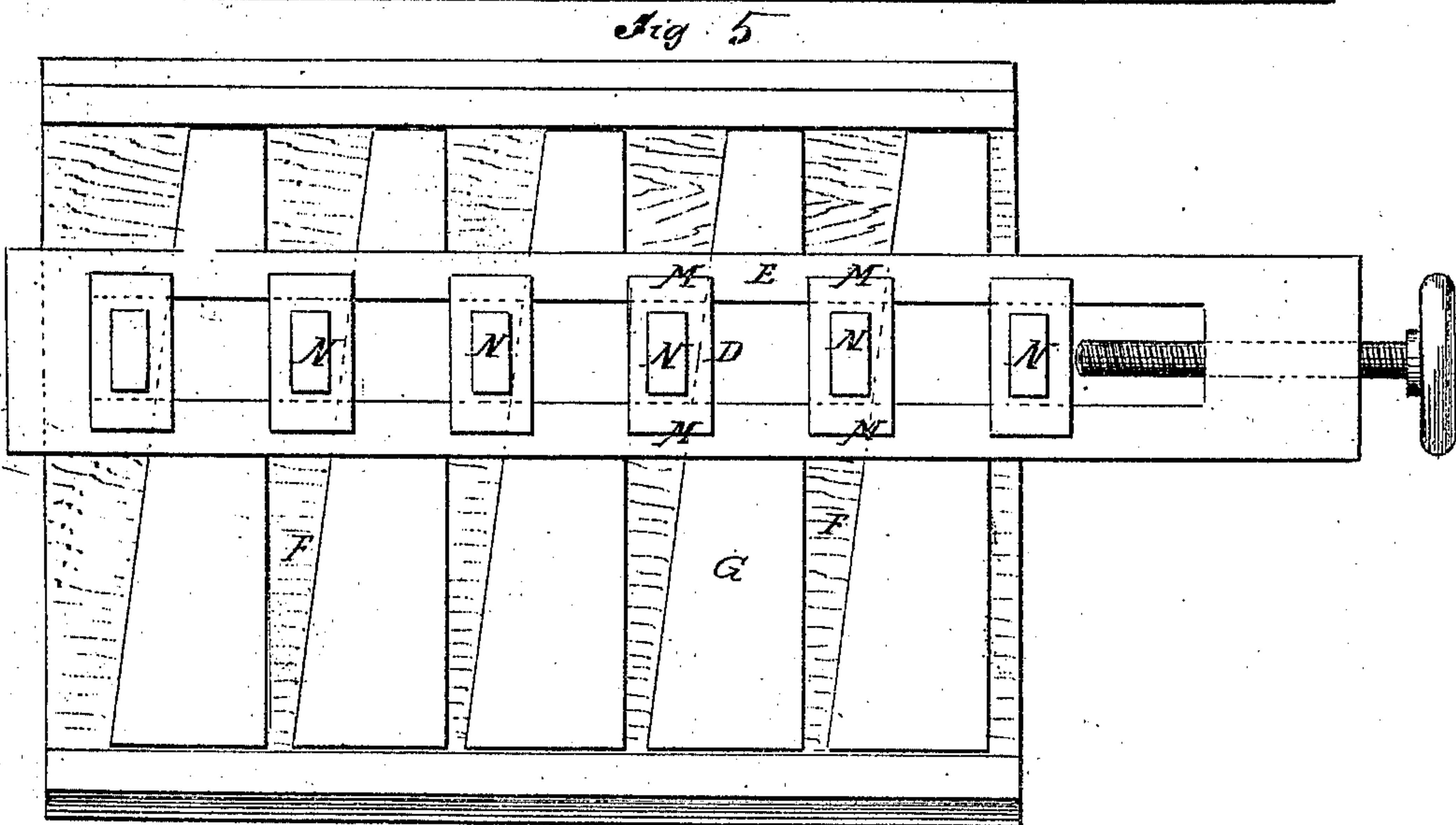
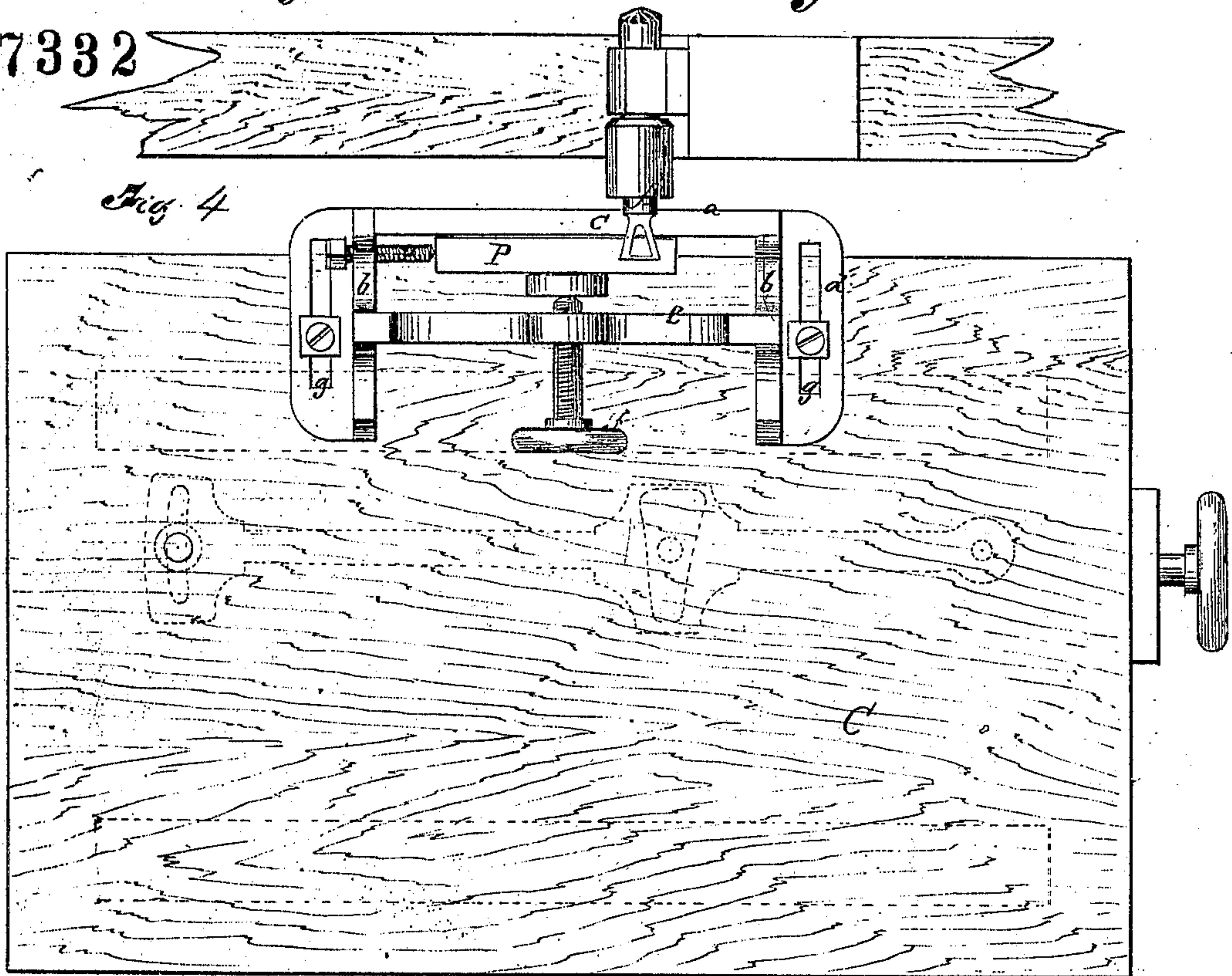
Inventor:

J. B. Ritchey

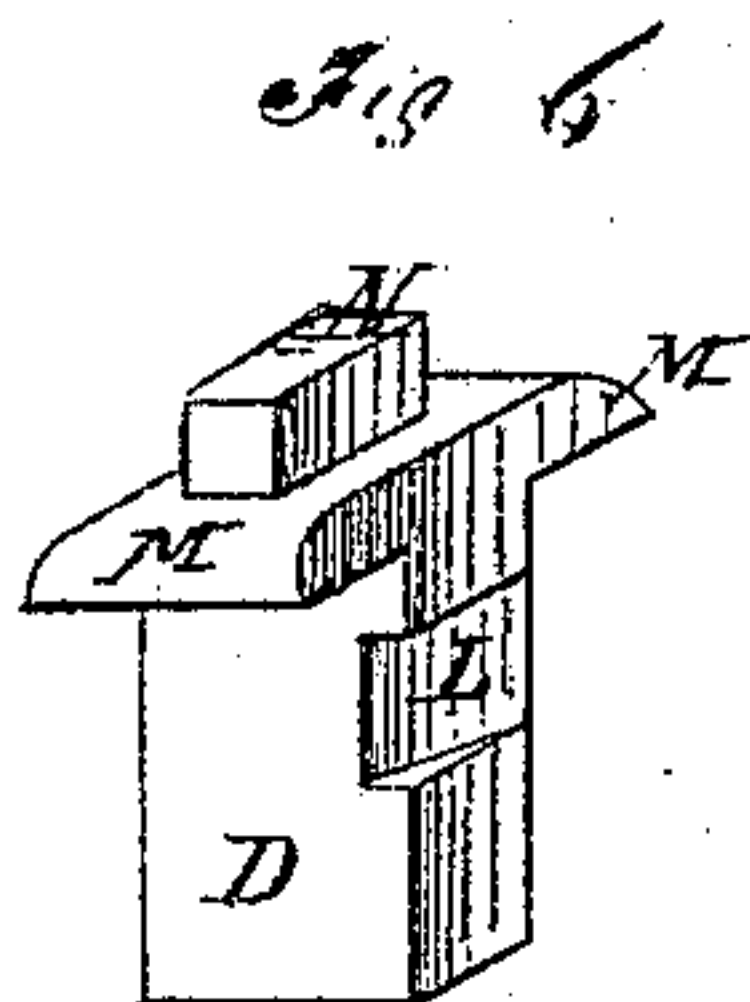
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J.B. Ritchey's Dovetailing Machine.

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UNITED STATES PATENT OFFICE.

JOHN B. RITCHEY, OF POMEROY, OHIO.

IMPROVEMENT IN DOVETAILING-MACHINES.

Specification forming part of Letters Patent No. 117,332, dated July 25, 1871.

To all whom it may concern:

Be it known that I, JOHN B. RITCHEY, of Pomeroy, in the county of Meigs and State of Ohio, have invented a new and Improved Dovetailing-Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention consists in improving dovetailing-machines, as hereinafter described and subsequently pointed out in the claims.

Figure 1 is a transverse sectional elevation through the table and a part of the cutter-frame. Fig. 2 is a longitudinal sectional elevation of the table. Fig. 3 is a plan view of the improved spring-bar used on the table in connection with the adjustable blocks for spacing the work and holding the table. Fig. 4 is a plan of the table and a part of the cutter-frame. Fig. 5 is a plan of the adjusting-blocks and their adjuncts. Fig. 6 is a perspective view of one of the adjustable blocks used in connection with the spring-bar for spacing. Fig. 7 is a perspective view of the end piece of the drawer fitted for joining with the front. Fig. 8 is a perspective view of the drawer front as I propose to prepare it with this improved machine for the reception of the end piece, Fig. 8.

Similar letters of reference indicate corresponding parts.

A is the revolving cutter, mounted in a vertically-reciprocating frame, B, and C is the table whereon the work is to be presented to the machine. This table, having the boards to be dovetailed clamped upon it, has to be moved along past the cutter the distance from center to center of the tenons or mortises, and held while the cutter moves up or down through the board when laid flatwise to do its work; and as the distances between centers vary in different work, it becomes necessary to employ adjustable spacing devices in connection with the table for the purpose. These consist, as described in the aforementioned application, in the adjustable blocks D, arranged in the slotted bar E, and having the wedge F between them, by which they are shifted closer together or further apart, as may be required by the work in hand, the said wedges being driven in or drawn back by the plate G

and adjusting-screw H, the upper ends of the blocks engaging a spring-pawl or holder, I, attached to the under side of the table, and springing down over the blocks, so that a projection, K, on it, bearing against the blocks at one side, will regulate or gauge the position of the table. In this example I propose to make use of the same instrumentalities, with the following modifications: I now propose to notch the blocks D on one side, as shown at L, and fit the wedges in them to hold them down, instead of employing flanges on the lower ends of the blocks, similar to those, M, at the top, and working under the bar E, which simplifies the construction of the blocks, and admits of arranging the said bar close upon the upper face of plate G, which is preferable; and instead of making the blocks with beveled upper ends, N, and the block K with a beveled lower side for riding over them and bearing against one side of the blocks, I propose to make the block tops N and the block K with a flat under side, so that it will act alike against either side of the blocks to stop the movement in either way, when required. I also now propose to make the block K wedge-shaped, and to attach the spring-bar I to the table at N' by a screw passing through a curved slot, or in any other equivalent way, whereby it may be adjusted laterally, so that after the blocks D have been adjusted and it is found that the tenon is spaced a little too large or too small, as the case may be, for fitting the mortise snugly, a slight variation can be produced by so shifting the spring-pawl as to cause the wedge to bear nearer to or further from the point, which will have the effect to lengthen or shorten the spaces, the table being shifted along so that the opposite edge of wedge K to that bearing against one stud N, while forming one side of the tenon, bears against the side of the next stud, instead of shifting the wedge over one stud, N, to the same side of the next one, as in the aforementioned invention. The end O of the said spring-lever is to be connected to a cranked lever on the top of the table, the same way as in the aforementioned case, for raising the block K above the block D to let the table be moved along. In order to provide drawer-front dovetails, such as is shown in Fig. 9, the piece to be worked must be held vertically on the table, so that the cutter may work up and down along the side of the piece,

cutting partly through it, while the end to be dovetailed rests on the table of the machine. For this purpose I provide the clamp shown in plan in Fig. 5 and in section, Fig. 1, which consists of the front plate *a*, the sides *b*, cross-piece *c*, flanges *d*, and clamp-screw *f*, the said flanges having long vertical slots *g* to be clamped adjustably to the table, by which the clamp may be adjusted toward or from the cutter to gauge the cut to the required depth. The said clamp may have a stop-screw, *k*, by which to adjust the piece so as to make the first tenon the right thickness.

The mode of operation in making the drawer-front dovetails is as follows: The movable blocks *D N* are adjusted so as to make the required number of mortises in the drawer ends, Fig. 8, and the piece to be cut being clamped on the table flatwise, the cutter is caused to pass down through it in the same manner as in the aforesaid invention, thereby forming the notches *Z*. This being done, the apparatus for clamping the stuff flatwise to the table being removed, and the clamp, Figs. 1 and 5, being attached to the table, also the piece for the drawer being clamped in it as shown, with the end to be dovetailed resting on the table but projecting over the edge of it as much or a little more than the depth of the mortises to be made, the spring-bar *I* and its wedge *K* are then properly adjusted against one of the blocks *D N*, and the cutter is raised to act on the work, and forms one side of the tenon *Q*, Fig. 9. The cutter is then lowered out of the stuff, and the table is moved so that the side of the block *K* opposite to that which was against a block *D N* is shoved against the next block. The cutter is again raised, making another cut and forming one side of the second

tenon *R*, Fig. 9; then, without allowing the cutter to descend, the table is moved toward the first cut, the cutter at the same time cutting away the wood between the said two cuts, and forming the cavity *S* between the two tenons. The spring-bar *I* is now raised so as to allow the block *K* to pass over the next stop and be adjusted against its side, when the above-described operations are repeated until all the cavities *S* are formed. Should the tenons of Fig. 9 fit too loosely in the notches of Fig. 8, it is only necessary to move the wedge-shaped block *K* of bar *I* a little in the direction to bring a wider part of the wedge against the blocks *D N*, by which the size of the spaces will be reduced and the size of the tenons increased; and should they fit too tightly they will be connected by the opposite movement of the bar *I*. Thus it will be seen that by very slight changes, very simple and easy to make, a perfect fit of the dovetail is secured.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The adjustable spacing blocks *D*, having a groove, *L*, in one side, and a spacing wedge, *F*, fitted therein for holding said blocks against being raised, substantially as specified.

2. The spring-bar *I*, arranged for lateral adjustment at its connection with the table, and provided with the wedge-shaped stop-block *K*, and the adjustable spacing-blocks *D* having the studs *N* thereof arranged for operation in conjunction with the said wedge-shaped block *K*, all substantially as specified.

JOHN B. RITCHEY.

Witnesses:

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W. H. MEREDITH.